Amendments to the claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A radio frequency tag identification system comprising a plurality of tags and a transceiver for sending information to and receiving information from the tags, wherein each tag is allocated an identification word comprising a predetermined number of bits, the tags comprising means for selectively modulating a signal received from the transceiver and transmitting the modulated signals back to the transceiver, and the transceiver comprising means for sending an interrogation signal comprising a plurality of portions, wherein each portion of the interrogation signal has two possible signal formats, in the form of pulses having different durations, and the format used for a given interrogation signal portion is determined by the transceiver in dependence on modulated responses from the tags to said given interrogation signal ~~any previous~~ portion, wherein each portion is associated with a predetermined bit, or bit sequence, of the identification words and is used to simultaneously interrogate the tags to identify, in response to modulated signals provided by the tags in response to the predetermined bit or bit sequence, the presence of a tag or tags having a given value of the identification word at the predetermined bit or bit sequence, wherein each tag is deactivated when not having said given value of the identification word at the predetermined bit or bit sequence.

2. (original) A system as claimed in claim 1, the transceiver further comprising, an antennae array, a radio frequency transponder, an external data communication port and an energising source.

3. (previously presented) A system as claimed in claim 2, wherein the transceiver generates modulated radio frequency power for application to the antennae.

4. (previously presented) A system as claimed in claim 1, including in each tag an inductive loop antennae or capacitor plates that will convert the electric power into an electric field to communicate with transponders and provide the power for transponders where this power is not derived internally within the transponder from internal batteries or a light cell.

5. (previously presented) A system as claimed in claim 1, including in each tag an antenna that will convert the signal power from the transceiver into an RF field to communicate with transponders.

6. (previously presented) A system as claimed in claim 1, the transceiver including means for determining the nature of the modulation based on the logical outcome of previous communications with tags to conduct a binary search.

7. (previously presented) A system as claimed in claim 1, the transceiver including means for detecting the modulation impressed on the field by any tag comprising a demodulator and an amplifier, wherein the modulation signal is sent to a processor in a logic block and is digitised within a logic processor and evaluated.

8. (previously presented) A system as claimed in claim 1, the tag or tags comprising signal pickup means, a rectifier, a clock extractor, a data extractor, a modulator and a logic section.

9. (previously presented) A system as claimed in claim 8, in which the signal pickup means comprises a pickup coil.

10. (currently amended) A method of detecting the presence of tags within a target area by sending interrogation signals from a transceiver for selective modulation and transmission back to the transceiver by tags present in the target area, each tag being

allocated an identification word comprising a predetermined number of bits, the method comprising:

sending from a transceiver an interrogation signal comprising a plurality of portions, each portion of the interrogation signal having two possible signal formats, in the form of pulses having different durations, and the format used for a given interrogation signal portion being determined by the transceiver in dependence on modulated responses from the tags to ~~any previous~~ said given interrogation signal portion, each portion being associated with a predetermined bit or bit sequence of the identification words and being capable of conveying a given value for the bit or sequence of bits, wherein tags having the value at the predetermined bit or bit sequence are configured to modulate the signal and transmit the modulated signal back to the transceiver, the modulation being used to identify the presence of those tags, and wherein each tag is deactivated when not having said given value of the identification word at the predetermined bit or bit sequence.

11. (previously presented) A method as claimed in claim 10, wherein the presence of a tag or tags having an individual identification word is detected by sending an interrogation signal having portions corresponding to all bits of the identification words.

12. (previously presented) A method as claimed in claim 10, wherein each portion comprises a first part which is used to interrogate the tags to determine whether in a tag or a plurality of tags the associated bit or sequence of bits has a first value, and a second part which is used to interrogate the tags to determine whether the associated bit or sequence of bits has a second value.

13. (previously presented) A method as claimed in claim 12, wherein if a portion is used to interrogate the tags to determine whether in a tag or a plurality of tags the associated bit or sequence of bits having the first value, the first part is sent, and if the

portion is used to interrogate the tags to determine whether the associated bit or sequence of bits has a second value, the first and second parts are sent.

14. (previously presented) A method as claimed in claim 13, wherein only if there is no response to the first part is the second part sent.

15. (previously presented) A method as claimed in claim 10, wherein a tag not having the value at the predetermined bit or bit sequence ignores further signals until an activation or a wake signal is received.

16. (previously presented) A method as claimed in claim 10, wherein data bits of a tag transponder are read from and/or written to by sending further bits after the interrogation signal, wherein tag then deactivates and ignores further signals until an activation signal is received.

17. (previously presented) A method as claimed in claim 10, whereby a tag can determine if the reader transceiver has received its attempted communication based on subsequent interrogation signals.

18. (previously presented) A method of identifying tags within a target area using a communication signal having a plurality of portions, each portion being of a substantially continuous first duration representing a first value or of a substantially continuous extended duration representing a second value, such that the portion has two possible formats in the form of pulses having different durations, each tag being allocated an identification word comprising a predetermined number of bits, the method comprising the steps of:

(a) transmitting from a transmitter the communication signal comprising a plurality of portions, each portion being associated with a predetermined bit of the identification word;

(b) receiving a portion of the signal at a tag and, if the identification word of the tag has said first value at the respective bit and if the tag is not deactivated, modulating the portion of the signal at the tag;

(c) monitoring at the transmitter the signal for modulation and,

(c1) if modulation is detected, recording the presence of at least one tag having the first value at the respective bit, not transmitting the communication signal portion for the extended duration such that the communication signal portion has the format with shorter pulse duration , and proceeding to step (f);

(c2) if no modulation is detected during the first duration, continuing the transmission of the first communication signal portion for the extended duration such that the communication signal portion has the format with longer pulse duration;

(d) receiving the signal at a tag during the extended duration and, if the identification word of the tag has the second value at the respective bit and if the tag is not deactivated, modulating the associated portion of the signal at the tag;

(e) monitoring at the transmitter the communication signal for modulation and,

(e1) if modulation is detected during the extended duration, recording the presence of at least one tag having the second value at the respective bit and proceeding to step (g),

(e2) if no modulation is detected during the extended duration, indicating that no tag is present in the target area;

(f) deactivating tags having the second value at the respective bit which do not receive an extended communication signal portion;

(g) if a communication signal for each bit of the identification word has been transmitted, indicating the presence of a tag having an identification word corresponding to the combination of recorded bit values, otherwise proceeding to step (a) for the next signal portion bit.

19. (previously presented) A method according to claim 18, further comprising the step of transmitting a reactivation signal from the transmitter, tags having been deactivated in step (f) receiving the signal reactivating themselves to thereby receive further communication signals.

20. (previously presented) A method according to claim 18, whereby a tag having each bit of its identification word transmitted is configured to accept read/write commands, the method further comprising the step (h) of reading from and/or writing to the tag by transmitting signals from the transmitter.

21. (previously presented) A method according to claim 20, further comprising the step of deactivating the tag after the reading and/or writing is completed.

22. (previously presented) A computer-readable memory having series of computer executable instructions for executing the method steps of the method of claim 18.

23. (previously presented) A computer-readable memory having a series of computer executable instructions for executing the method steps of the method of claim 10.